

## CLAIMS

What is claimed is:

1. A self-propelled cast fishing apparatus comprising:

a support member; and

a constant torque spring (CTS) motor fixedly positioned with respect to said support member, wherein said CTS motor imparts a propulsion force for propelling an article of fishing tackle from said support member.

2. The self-propelled cast fishing apparatus of claim 1, wherein said support member comprises a hollow barrel tube having a distal open mouth end from which the article of fishing tackle is propelled.

3. The self-propelled cast fishing apparatus of claim 2, wherein said barrel tube includes a distal open mouth from which that article of fishing tackle is propelled, said self-propelled cast fishing apparatus further comprising a flexible pull-out line support member attached to said barrel tube and extending distally beyond the open mouth end.

4. The self-propelled cast fishing apparatus of claim 3, wherein said line support member comprises a telescopically extensible rod-like member supporting an apertured eyelet.

5. The self-propelled cast fishing apparatus of claim 1, wherein said CTS motor comprises a strip-like spring material wound onto at least one storage drum and at least one output drum.

6. The self-propelled cast fishing apparatus of claim 5, wherein said spring material comprises a pre-stressed metallic band having a persistent spiral curvature conforming to said at least one storage drum.

7. The self-propelled cast fishing apparatus of claim 5, wherein said spring material is stored on said at least one storage drum prior to and following a casting cycle.

1 8. The self-propelled cast fishing apparatus of claim 5, wherein said CTS motor imparts  
2 the propulsion force during a release phase of a casting cycle during which said spring  
3 material rotatably unwinds from said at least one output drum onto said at least one  
4 storage drum.

1 9. The self-propelled cast fishing apparatus of claim 8, wherein said spring material is  
2 back wound from said at least one storage drum onto said at least one output drum during  
3 a loading phase of a casting cycle.

1 10. The self-propelled cast fishing apparatus of claim 1, further comprising motive force  
2 translation means for translating the rotational force of said CTS motor to a linear  
3 propulsion force applied to the article of fishing tackle.

1 11. The self-propelled cast fishing apparatus of claim 10, wherein said CTS motor  
2 comprises a strip-like spring material wound onto at least one storage drum and at least  
3 one output drum, said motive force translation means comprising means for translating  
4 the rotational force of said at least one output drum during a release phase of a casting  
5 cycle to a linear propulsion force applied to the fishing tackle within said barrel tube.

1 12. The self-propelled cast fishing apparatus of claim 11, wherein said means for  
2 translating the rotational force of said at least one output drum comprises a draw cord  
3 having a first end wound onto a draw cord spool and a second end attached to a pusher  
4 member that pushes the article of fishing tackle along said support member, wherein said  
5 draw cord spool is coaxially mounted with respect to said at least one output drum such  
6 that said draw cord spool rotates in conformity with the rotation of said at least one  
7 output drum.

1 13. The self-propelled cast fishing apparatus of claim 12, wherein said support member  
2 comprises a hollow barrel tube, said self-propelled cast fishing apparatus further  
3 comprising a slider member coupled to said pusher member, wherein said slider member

4 provides external access to said pusher member such that said pusher member may be  
5 urged by a user into a loaded position within said barrel tube.

1 14. The self-propelled cast fishing apparatus of claim 13, wherein said barrel tube  
2 includes a longitudinal slot through which said slider member is coupled to said pusher  
3 member.

1 15. The self-propelled cast fishing apparatus of claim 14, wherein said longitudinal slot  
2 is disposed along the bottom longitudinal edge of said barrel tube.

1 16. The self-propelled cast fishing apparatus of claim 14, further comprising a loading  
2 handle attached to said slider member, wherein said loading handle is manually movable  
3 along said longitudinal slot to urge said pusher member to the loaded position.

1 17. The self-propelled cast fishing apparatus of claim 16, wherein said loading handle  
2 includes means for disengaging said loading handle from said slider member prior to the  
3 release phase of a casting cycle.

1 18. The self-propelled cast fishing apparatus of claim 13, further comprising a cast  
2 actuator having latch release means for releasing said slider member from a latched  
3 position such that said pusher member pushes said article of fishing tackle toward an  
4 open mouth end of said barrel tube.

1 19. The self-propelled cast fishing apparatus of claim 18, wherein said article of fishing  
2 tackle is attached to a fishing line, said self-propelled cast fishing apparatus further  
3 comprising a reel for retrievably maintaining a fishing line onto which said article of  
4 fishing tackle is attached, wherein said reel includes line release means for mechanically  
5 releasing the fishing line from the spool.

1 20. The self-propelled cast fishing apparatus of claim 19, wherein said cast actuator  
2 comprises an external push button lever that sequentially actuates said line release means

3 and said latch release means such that the fishing line is released from the spool prior to  
4 said slider member being release from its latched position.

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5 21. A casting system comprising:

6 a tubular support member having a distal open mouth end from which an article of  
7 fishing tackle is propelled; and

8 a constant torque spring (CTS) motor fixedly positioned with respect to said  
9 tubular support member, wherein said CTS motor imparts a propulsion force for  
10 propelling the article of fishing tackle from said tubular support member.

1 22. The casting system of claim 21, further comprising a flexible pull-out line support  
2 member attached to said tubular support member and extending distally beyond the open  
3 mouth end.

1 23. The casting system of claim 22, wherein said line support member comprises a  
2 telescopically extensible rod-like member supporting an apertured eyelet.

1 24. The casting system of claim 21, wherein said CTS motor comprises a strip-like  
2 spring material wound onto at least one storage drum and at least one output drum.

1 25. The casting system of claim 24, wherein said spring material comprises a pre-  
2 stressed metallic band having a persistent spiral curvature conforming to said at least one  
3 storage drum.

1 26. The casting system of claim 24, wherein said spring material is stored on said at least  
2 one storage drum prior to and following a casting cycle.

1 27. The casting system of claim 24, wherein said CTS motor imparts the propulsion  
2 force during a release phase of a casting cycle during which said spring material rotatably  
3 unwinds from said at least one output drum onto said at least one storage drum.

1 28. The casting system of claim 27, wherein said spring material is back wound from  
2 said at least one storage drum onto said at least one output drum during a loading phase  
3 of a casting cycle.

1 29. The casting system of claim 21, further comprising motive force translation means  
2 for translating the rotational force of said CTS motor to a linear propulsion force applied  
3 to the article of fishing tackle.

1 30. The casting system of claim 29, wherein said CTS motor comprises a strip-like  
2 spring material wound onto at least one storage drum and at least one output drum, said  
3 motive force translation means comprising means for translating the rotational force of  
4 said at least one output drum during a release phase of a casting cycle to a linear  
5 propulsion force applied to the fishing tackle within said tubular support member.

1 31. The casting system of claim 30, wherein said means for translating the rotational  
2 force of said at least one output drum comprises a draw cord having a first end wound  
3 onto a draw cord spool and a second end attached to a pusher member that pushes the  
4 article of fishing tackle along said tubular support member, wherein said draw cord spool  
5 is coaxially mounted with respect to said at least one output drum such that said draw  
6 cord spool rotates in conformity with the rotation of said at least one output drum.

1 32. The casting system of claim 31, further comprising a slider member coupled to said  
2 pusher member, wherein said slider member provides external access to said pusher  
3 member such that said pusher member may be urged by a user into a loaded position  
4 within said tubular support member.

1 33. The casting system of claim 32, wherein said tubular support member includes a  
2 longitudinal slot through which said slider member is coupled to said pusher member.

1 34. The casting system of claim 33, wherein said longitudinal slot is disposed along the  
2 bottom longitudinal edge of said tubular support member.

1 35. The casting system of claim 33, further comprising a loading handle attached to said  
2 slider member, wherein said loading handle is manually movable along said longitudinal  
3 slot to urge said pusher member to the loaded position.

1 36. The casting system of claim 35, wherein said loading handle includes means for  
2 disengaging said loading handle from said slider member prior to the release phase of a  
3 casting cycle.

1 37. The casting system of claim 32, further comprising a cast actuator having latch  
2 release means for releasing said slider member from a latched position such that said  
3 pusher member pushes said article of fishing tackle toward an open mouth end of said  
4 tubular support member.

1 38. The casting system of claim 37, wherein said article of fishing tackle is attached to a  
2 fishing line, said casting system further comprising a reel for retrievably maintaining a  
3 fishing line onto which said article of fishing tackle is attached, wherein said reel  
4 includes line release means for mechanically releasing the fishing line from the spool.

1 39. The casting system of claim 38, wherein said cast actuator comprises an external  
2 push button lever that sequentially actuates said line release means and said latch release  
3 means such that the fishing line is released from the spool prior to said slider member  
4 being release from its latched position.

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